

**STATEWIDE FISHERIES SURVEYS, 2001  
MANAGEMENT PLAN**

**South Dakota  
Department of  
Game, Fish and Parks  
Wildlife Division  
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Pierre, South Dakota 57501-3182**

**Annual Report  
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# STATEWIDE FISHERIES SURVEYS, 2001

MANAGEMENT PLAN

SOUTH DAKOTA

ANNUAL REPORT

Edited by  
**DAN R. JOST**

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---December, 2002

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**Statewide Fisheries Surveys, 2001  
Management Plan for Permanent and Semi-Permanent Waters**

**South Dakota**

**By**

**Dan R. Jost**

**INTRODUCTION**

Efforts were directed to review, update and analyze information pertinent to the character of 15 selected South Dakota Lakes and are contained in this report, of these; all are five-year updates of previous plans.

**ACCOMPLISHMENTS**

**Management Region I**

Management plan updates were scheduled for 10 waters in Management Region I. Updates were not completed in Region I due to lack of time resultant from personnel changes that left the Fisheries Program Manager Position in Region I vacant through the majority of the reporting period.

**Management Region II**

Management plans for Region II were completed as scheduled for the following waters:

<b><u>COUNTY</u></b>	<b><u>WATER</u></b>
Brule	Wells
Campbell	Campbell
Gregory	Herrick
Hyde	Chapelle
Hand	Dakota
Lyman	Reliance
Potter	Simon
Sully	Sully
Tripp	Beaulieu
Tripp	Dog Ear
Tripp	Snow

**Management Region III**

Management plans for four waters were written as scheduled and here in contained.

<b><u>COUNTY</u></b>	<b><u>WATER</u></b>
Beadle	Ravine
Brookings	Sinai
Lake	Madison
Kingsbury	Thompson

### **Management Region IV**

Management plans originally scheduled under F-21-R-34 in Region IV were not completed due to a change in reporting format. Management recommendations and options are reported in the annual lake survey reports for those waters.

### **Reservoir Management**

Management plans for Lake Oahe, Lake Sharpe, Lake Francis Case, and Lake Lewis and Clark are written periodically as dictated by changes in management direction. Management plans for these waters are reported utilizing a separate format.

## **OBJECTIVES**

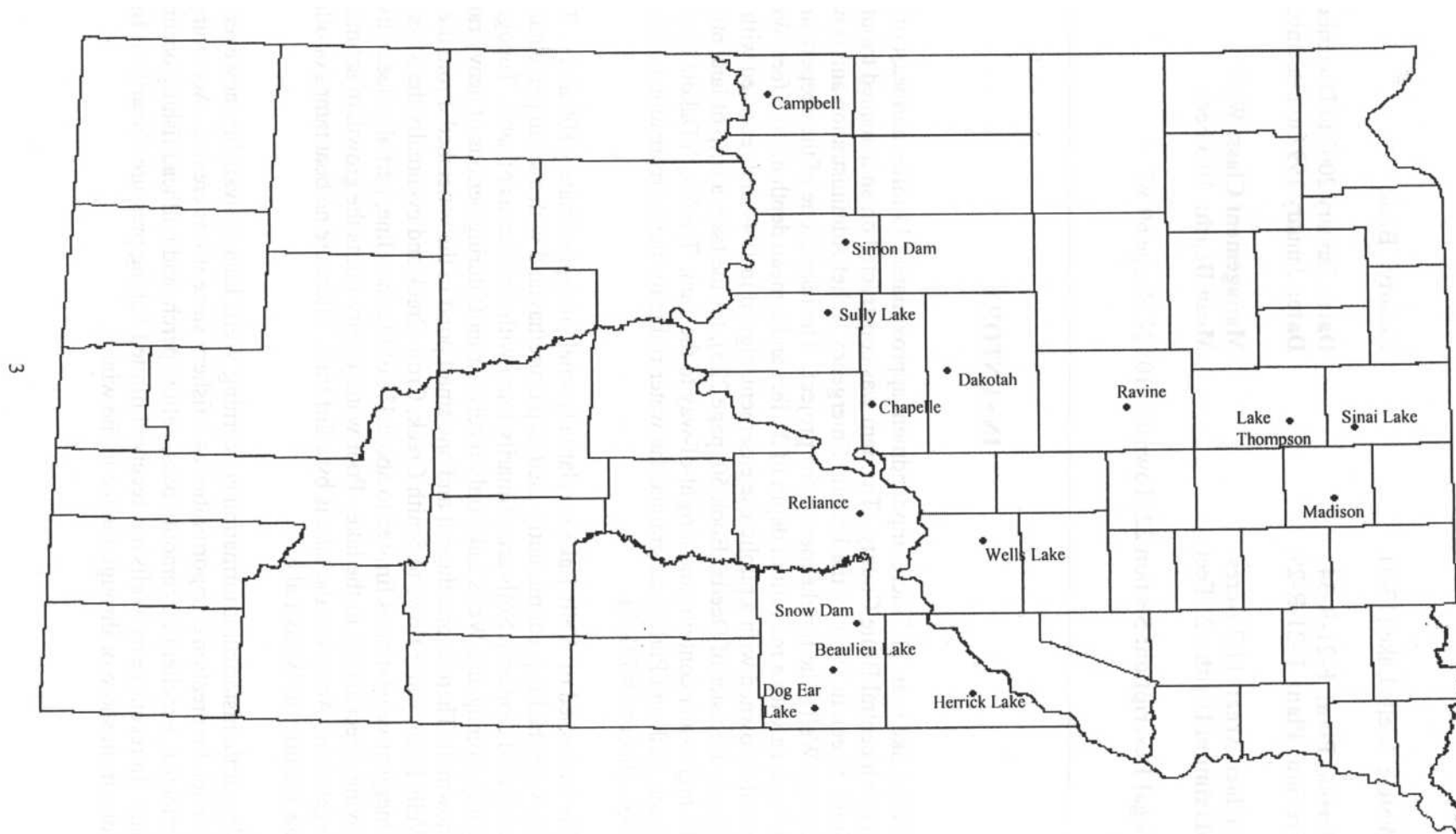
To complete or update management plans and outline goals, objectives and strategies on South Dakota waters.

## **PROCEDURES**

Reports and data from all available sources were analyzed to prepare a history of the past and present management of each water. From this, data management plans were formulated. Various management actions are scheduled considering the development or changes in limnological and ecological structure of the lake. These actions may include manipulation of fish populations by stocking, harvesting or rehabilitation, population control practices and/or changes within the watershed, fishing regulations, access development, and lake basin modifications. The rewrites and updates include previously prepared management plans, data from periodic resurveys and changes in deficiencies in the ecological, limnological and population dynamics of the water.

## 2001 South Dakota Lake Management Plan

### Location Map



## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Wells Lake (13-3)

**County:** Brule

**Present Plan:** F-21-R-34

**Date:** January 2002 to December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 to December 2001

**Surface Area:** 11.7 Acres

**Management Class:** WSP

**Maximum Depth:** 21 Feet

**Mean Depth:** 10.3 Feet

**Legal Description:** Section 22, Township 105 N, Range 69 W

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### INVENTORY

Wells Lake is an 11.7-acre impoundment approximately 11 miles northeast of Pukwana in north central Brule County. The dam was constructed on an unnamed tributary of Smith Creek in 1934 by the Federal Emergency Relief Administration and is named for George Wells, the timekeeper on the project. The lake is one of the deepest small waters in the area with a maximum depth of 21 feet and a mean depth of 10.3 feet. Wells Lake is privately owned with a public use easement, signed in 1944 and recorded with the Brule County Register of Deeds (Book 50, page 225), for the lake, a strip of land 60 feet above the high water contour, and a right-of-way to the dam. The South Dakota Department of Game, Fish and Parks was granted the water rights for public recreation on April 24, 1961, (license # 738-3).

The watershed of Wells Lake is relatively small at approximately 800 acres. The land in the watershed is predominantly used as pasture/hayland with a small percentage of cultivated cropland. Soils are primarily loam with small areas of sand. Topography is gently sloping and Wells Lake only receives runoff during periods of heavy rain or snowmelt. There is one dugout and one small pond in the watershed. From the outlet of Wells Lake, water flows to Smith Creek, Crow Creek and eventually the Missouri River. Emergent vegetation is limited to about 1 % of the shoreline, partially due to livestock having direct access to the lake. Poor water clarity limits the growth of submergent vegetation. Access to the lake is by a dirt trail. There are no boat ramps or other public use facilities at Wells Lake.

Very little historical information concerning Wells Lake is available, however it has provided recreational opportunities as a fishery since it was created. According to local residence, excellent largemouth bass, yellow perch, and bullhead fishing occurred in the past. In recent years Wells has received limited fishing pressure. Nearly all fishing is done from shore or through the ice in the winter.



Stocking records for Wells Lake date back to 1935 when black bullhead adults and fingerlings were put into the lake. In 1942, largemouth bass fingerlings were stocked. No other recorded stockings were completed until 1984 when northern pike were introduced. Though not recorded, it is thought that many unauthorized stockings of fish have occurred in the past at Wells Lake. Recent stockings have involved largemouth bass in attempts to control the bullhead population and provide a desirable gamefish species.

**Stocking Record for Wells Lake, Brule County**

YEAR	NUMBER	SPECIES	SIZE
1984	20,000	NOP	FRY
1984	500	NOP	FRY
1985	1,400	LMB	FGL
1986	1,400	LMB	FGL
1987	500	LMB	FGL
1988	400	LMB	FGL
1990	500	LMB	FGL
1991	1,000	LMB	FGL
1999	1,200	LMB	FGL

Four standard fisheries population surveys have been completed at Wells Lake since 1990. In each case, bullheads were the most abundant species present. Northern pike, yellow perch, carp, sunfish and largemouth bass were also sampled in low densities. The most recent survey was completed in 2000 utilizing eight, 24-hour,  $\frac{3}{4}$  inch frame-net sets. Though largemouth bass have been stocked on several occasions during the past ten years, no electrofishing was completed at Wells Lake.

**Total catch of eight, 24 hour, 3/4-inch frame nets at Wells Lake, Brule County, July 17-19,2000**

Spec	No.	Low 80% CI	Mean CPUE	Up 80% CI	Low 90% CI	PSD	Up 90% CI	Low 90% CI	Stock Mean Wr	Up 90% CI
<b>BLB</b>	148	11.1	15.0	18.9	90	94	99	84.4	85.3	86.2
<b>COC</b>	1	0.0	0.1	0.3	na	na	na	na	Na	Na
<b>GOS</b>	4	0.1	0.5	0.9	na	na	na	na	Na	Na
<b>OSS</b>	4	0.1	0.5	0.9	na	na	na	na	Na	Na
<b>NOP</b>	1	0.0	0.1	0.3	na	na	na	na	Na	Na
<b>YEP</b>	31	2.9	3.9	4.9	100	100	100	66.6	67.5	68.3

## MANAGEMENT GOAL

**To manage the fishery at Wells Lake to maximize angler opportunity.**

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## OBJECTIVES AND STRATEGIES

- Objective 1.** Maintain black bullhead densities to a trap-net CPUE of 20 or less.
- Strategy 1 a. Increase predator densities to a level that effectively limits bullhead recruitment.
- Strategy 1 b. Physically remove black bullheads to reduce densities.
- Objective 2.** Maintain Wells Lake's largemouth bass population at a nighttime electrofishing CPUE of 20 or greater
- Strategy 2a. Collect data on largemouth bass by means of nighttime electrofishing to determine current population density and size structure.
- Strategy 2b. Stock largemouth bass adults, if necessary, to supplement existing population.
- Objective 3.** Enhance the yellow perch population to a CPUE of between 8 and 15 with condition and growth at or above the state average. -
- Strategy 3a. Monitor yellow perch population by means of standard population survey methods to determine density, growth and condition.
- Objective 4.** Inform, receive, and use public input to assist in the management of Wells Lake.
-

## **5 YEAR OPERATIONAL PLAN**

1. Conduct a standard fisheries population survey in 2003 utilizing eight, 24-hour frame-net sets, and at least one hour of nighttime electrofishing to monitor all fish species.
2. Utilize Department crews to remove all black bullheads captured during the 2003 survey.
3. If netting survey reveals a yellow perch CPUE of less than 5, stock with adult perch at a rate of 10/acre.
4. If nighttime electrofishing reveals a largemouth bass CPUE of 10/hour or less, stock with adult bass at a rate of 10/acre.
5. The local Conservation Officer and other GF&P staff should solicit input from all sources and provide information to the Regional Fisheries Manager on a timely basis.
6. Conduct a thorough evaluation of the present management plan and complete a new plan by January 2007.

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Completed by Dan R Jost, Regional Fisheries Manager, Region II

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Campbell Lake (16-4)

**County:** Campbell

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 - December 2001

**Surface Area:** 40 Acres

**Management Class:** WSP

**Maximum Depth:** 22 Feet

**Mean Depth:** 9 Feet

**Legal Description:** Sections 10, 11, & 15, Township 126 N, Range 77 W

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### INVENTORY

Campbell Lake is a 40-acre impoundment 1 mile west, 2 miles north, and 1/2 mile west of Mound City in central Campbell County. The artificial lake was created by the Works Progress Administration (WPA) in 1934 when construction of an earthen dam on Olsen Creek was completed. Campbell County owns 40 acres in Section 11 including the dam and spillway of Campbell Lake. The remainder of the lake is privately owned with a public use easement for the lake and a 12-foot strip of land above the high water contour to the State of South Dakota. This easement is recorded and filed in Misc. Book 4, Page 534 in the Campbell County Register of Deeds Office.

The watershed for Campbell Lake is approximately 9,230 acres or 14 1/2 square miles. Land use in the watershed is 60% cultivated agricultural land, 38% native grasses utilized for pasture and hayland and 2% farmsteads, roads, and tree belts. Topography varies from near level to gently rolling with soils consisting of deep silt and loam. Siltation in the upper part of the lake is evident. A siltation survey completed in 1973 revealed the loss of 90.4 acre-feet of storage capacity. Since there haven't been any watershed improvement projects at Campbell Lake, it is logical to assume siltation has continued to reduce the storage capacity during the past 30 years. From the outlet of Campbell Lake water flows down Olsen Creek to Spring Creek, Lake Pocasse, and eventually the Missouri River. Emergent vegetation, mostly bulrush, is found along the majority of the shoreline. Submergents are found throughout the lake and grow to a depth of 6 feet. Access to Campbell Lake is good with a gravel road leading to the access area. A concrete plank ramp provides adequate boat access to the lake and Campbell County maintains a park and picnic area for public use. Considerable erosion to the spillway has occurred in the past. The problem was repaired in 1998 and now all structures are in good condition.

Campbell Lake has provided a recreational fishery since its construction in 1934. After the lake filled, stockings of black bullhead and black crappie were recorded during the 1930s. From 1948 to 1956 walleye, largemouth bass, and northern pike were introduced to Campbell. In its early years crappies, bluegills, perch and bass provided good angling opportunity. In 1959, reports of poor fishing were received due to too many panfish and infestations of carp and bullheads. The lake was chemically eradicated to eliminate all fish life in 1960. Following the rehabilitation effort, bluegill, largemouth bass, northern pike and walleye were stocked at Campbell Lake. Throughout the 1960s and 1970s several stockings of largemouth bass, walleye and northern pike were completed with only slightly successful results. During this time period, black bullheads dominated the fish population. From 1980 to present, fish management has focused on largemouth bass and bluegill. Several bass stockings have been completed during the past 20 years. A summer algae bloom caused Campbell Lake to become anoxic resulting in a fish kill in 1992. Netting investigations revealed few gamefish and a large population of black bullheads remained in the lake. Intensive bullhead removal efforts were completed along with bass fingerling and juvenile stockings. In addition, a 15-inch size restriction was placed on bass to allow them to grow large enough to effectively control bullheads. The lake winterkilled in 1997 due to heavy snowcover and low water conditions. Following this kill, bluegill and bass adults along with largemouth bass fingerlings were stocked. Since the 1997, fish kill bullhead numbers have been kept at tolerable levels and the lake has developed in to a quality largemouth bass and bluegill fishery.

#### Stocking record for Campbell Lake, Campbell County

YEAR	NUMBER	SPECIES	SIZE
1980	560	BLG	ADT
1980	2,000	LMB	FGL
1980	365	NOP	ADT
1980	5,500	LMB	FGL
1981	7,000	LMB	FGL
1983	10	LMB	ADT
1983	490	LMB	FGL
1986	3,400	YEP	FGL
1987	2,000	LMB	FGL
1988	2,000	LMB	FGL
1990	2,700	LMB	FGL
1991	2,000	LMB	FGL
1992	4,000	LMB	FGL
1992	2,000	YEP	FGL
1993	4,000	LMB	FGL
1994	4,000	LMB	FGL
1994	300	LMB	JUN
1997	36	BLG	ADT
1997	110	LMB	ADT
1997	4,000	LMB	FGL

Campbell Lake's fish population was most recently surveyed in 1999 using eight, 24-hour,  $\frac{3}{4}$  inch frame nets and 25 minutes of nighttime electrofishing. From this survey it appears that the stockings of gamefish at Lake Campbell following the 1997 winterkill were successful. An electrofishing CPUE of 96 largemouth bass/hour with a PSD of 95 and a Wr of 106.3 were recorded. Bluegills had a trap net CPUE of 148.3. The fish were small with a PSD of only 6, but condition was well above average with a Wr of 117.7. It is hoped that bluegill growth will continue at or above state average.

**Total catch of eight, 24 hour, 3/4-inch frame nets and 25 minutes of electrofishing at Campbell Lake, Campbell County, 1999.**

Spec.	No.	%	CPUE (80%CI)	PSD (90%CI)	Stock Mean Wr
LMB (ELECTRO)	40	-	96	95(5)	106.3
BLB (TRAP)	1978	62.5	247.3 (82.4)	18(2)	N/A
BLG (TRAP)	1186	37.5	148.3 (55.7)	6(1)	117.7
BLC (TRAP)	1	0.1	N/A	N/A	N/A
LMB (TRAP)		0.1	N/A	N/A	N/A

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## MANAGEMENT GOAL

**To manage the fishery at Campbell Lake to maximize angler opportunity.**

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## OBJECTIVES AND STRATEGIES

- Objective 1.** Maintain largemouth bass population densities with nighttime electrofishing CPUE of 40/hour and a PSD of 40 or greater.
- Strategy 1 a. Monitor largemouth bass population by means of standard survey methods to determine density, age, growth, size structure, and condition.
- Objective 2.** Reduce black bullhead densities to a trap net CPUE of 50 or less.
- Strategy 2a. Maintain largemouth bass densities at high enough levels to limit bullhead recruitment.
- Strategy 2b. Utilize Dept. crews to complete bullhead removal projects if necessary.

**Objective 3.** Increase bluegill PSD values between 50 and 80 with growth and condition factors at or above the state average.

Strategy 3a. Maintain largemouth bass population at densities high enough to limit panfish recruitment and prevent overpopulation and slow growth rates.

**Objective 4.** Inform, receive, and use continuing input from the public and other agencies to assist in the management of Campbell Lake.

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### **5 YEAR OPERATIONAL PLAN**

1. Conduct standard fisheries population surveys in 2002 and 2005 utilizing eight, 24 hour frame-net sets and at least 1 hour of nighttime electrofishing to monitor all fish species.
2. Utilize Dept. Crews to remove all black bullheads captured at the time of the 2002 and 2005 lake surveys.
3. The local Conservation Officer and other GF&P staff should solicit input from private and public sources and provide input back to the Regional Fisheries Manager on a timely basis.
4. Conduct a thorough evaluation of the present management plan and complete a new plan by January, 2005.

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Completed by Dan R Jost, Regional Fisheries Manager, Region II

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Herrick Lake (30-6)

**County:** Gregory

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 - December 2001

**Surface Area:** 12 Acres

**Management Class:** WWM

**Maximum Depth:** 14 Feet

**Mean Depth:** 6 Feet

**Legal Description:** Section 26, Township 96 N, Range 71 W

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### INVENTORY

Herrick Lake is a 12-acre impoundment one mile southwest of Herrick in southern Gregory County. The lake was created in 1935 when the Works Progress Administration (WPA) constructed an earthen dam on the upper end of a tributary of Ponco Creek. After construction and the lake filled, a contest was held in the Herrick community to name the lake. Edward Fry selected the name Splendor Lake due to the lakes clear water. Splendor Lake has been the formal name of the lake since it's origin; however its proximity to the town of Herrick has resulted in the lake being commonly known as Herrick Lake. This is generally the preferred name at the present time.

Herrick Lake lies within 160 acres of land owned by the South Dakota Dept. of Game, Fish & Parks. This area was purchased in 1958 and designated as a Game Production Area. The land had previously been recorded as indemnity school land of the State. A patent to the land, including Herrick Lake, was recorded on January 2, 1959 in Patent Book H, Page 521, in the Gregory County Register of Deeds Office. GF&P was issued water rights permit #623-2 for 90-acre feet annually for recreational use.

The watershed for Herrick Lake is small at approximately 800 acres or  $\frac{1}{4}$  square mile. Most of the water in the lake is derived from live springs that flow throughout the year. Land use in the watershed is 20% cultivated farmland, 40% pasture and hayland, and 40% native grasses within the Game Production Area. Topography varies from nearly level to gently rolling and consists primarily of deep sandy loam and sandy clay soils. From the outlet of Herrick Lake water flows to Ponco Creek and eventually the Missouri River. Submergent vegetation, primarily coontail and sago pondweed, is found throughout the lake and becomes extremely dense from mid-summer to fall. Emergent vegetation is found along the shoreline the upper  $\frac{1}{3}$  of the lake. Access to Herrick Lake is from a county road that runs across the dam grade. A small access area is located on



the east side of the grade. A small concrete plank boat ramp is the only public use facility at Herrick Lake.

Herrick Lake has provided limited recreation for the local community since it was constructed. Most of the early use of the area centered on the largemouth bass fishery. Bass fishing pressure was moderate to heavy at times with good success until the middle 1950s. At that time bluegills became more numerous and excessive vegetation problems caused the fishing to rapidly decline. Present use is limited to spring and early summer fishing, waterfowl hunting and occasional trapping. Fisheries management began almost immediately at Herrick Lake with recorded stockings of black bullheads and bluegills in 1935. Largemouth bass were also present during Herrick's early years though no bass stockings are found in the records until 1993.

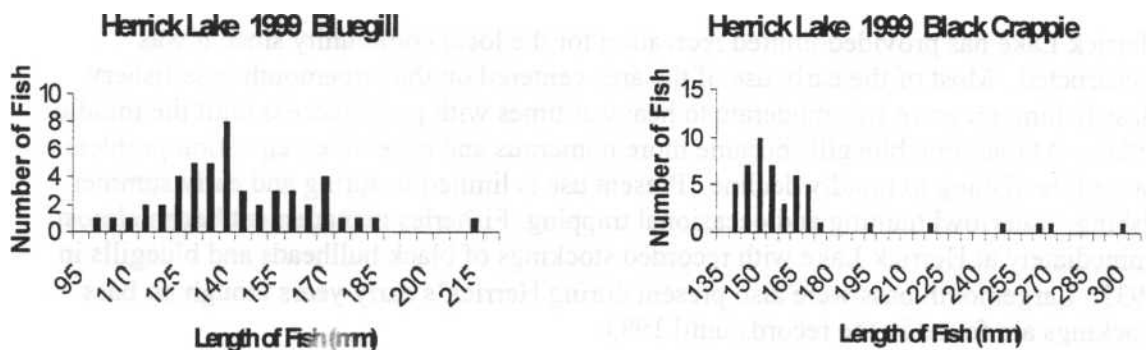
#### Stocking record for Herrick Lake, Gregory County

YEAR	NUMBER	SPECIES	SIZE
1935	300	BLB	ADT
1935	500	BLG	ADT
1948	1,000	BLB	ADT
1954	2,000	WAE	FGL
1955	2,200	CCF	FGL
1956	3,000	CCF	FGL
1979	25	NOP	ADT
1980	80	NOP	ADT
1983	900	CCF	FGL
1993	1,200	LMB	MED
1997	122	NOP	ADT
2000	150	LMB	ADT

Herrick Lake was most recently surveyed in 1999 utilizing eight, 24-hour,  $\frac{3}{4}$  inch frame net sets. Black crappie was the most abundant species captured with a CPUE of 76.1. PSD was 10 and relative condition was 101. Bluegills were the second most populous species with a CPUE of 63.6. Northern Pike, black bullhead, yellow perch, largemouth bass, and green sunfish were also captured during the 1999 survey.

#### Total catch of eight, 24 hour, 3/4-inch frame nets at Herrick Lake, Gregory County, 1999.

Spec.	No.	%	CPUE (80%CI)	PSD (90%CI)	Stock Mean Wr
BLC	610	52.1	76.1 (20.5)	10(4)	101
BLG	509	43.4	63.6 (17.1)	36(6)	106
NOP	19	1.6	2.4 (0.7)	100	93
BLB	13	1.1	1.6 (0.7)	100	N/A
YEP	12	1.0	0.6 (0.6)	36	105
LMB	6	0.5	0.8	N/A	N/A
GRS	3	0.3	0.4	N/A	N/A




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## MANAGEMENT GOAL

**To manage the fishery at Herrick Lake to maximize angler opportunity.**

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## OBJECTIVES AND STRATEGIES

**Objective 1.** Maintain largemouth bass densities with a nighttime electrofishing CPUE of at least 20/hour and a PSD of at least 40.

Strategy 1 a. Determine current largemouth bass population density and size structure.

Strategy 1b. If required stock largemouth bass adults to supplement existing population and increase recruitment.

**Objective 2.** Reduce bluegill and crappie populations to a trap net CPUE of 20 - 30 with at or above statewide average growth and condition.

Strategy 2a. Monitor panfish populations utilizing length and growth information from scale samples to determine growth rates.

Strategy 2b. Maintain adequate density of predator species to limit panfish recruitment and minimize potential for growth stunting.

Strategy 2c. Utilize as a source of panfish to stock other waters as needed.

**Objective 3.** Maintain black bullhead populations at a trap-net CPUE of less than 20.

Strategy 3a. Maintain largemouth bass densities at a high enough level to significantly limit black bullhead recruitment.

**Objective 4.** Inform, receive, and use continuing input from the public and other Agencies to assist in the management of Herrick Lake.

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### **5 YEAR OPERATIONAL PLAN**

1. Conduct standard fisheries population surveys in 2002 and 2005 utilizing eight, 24 hour, 3/4 inch frame-net sets and one hour of nighttime electrofishing to monitor all fish species.
  2. Stock largemouth bass adults at a rate of 10/acre if survey results yield a CPUE of less than 20 in 2002.
  3. The local Conservation Officer and other GF&P staff should solicit input from public sources and provide input back to the Regional Fisheries Manager on a timely basis.
  4. Conduct a thorough evaluation of the present management plan and complete a new plan by January 2005.
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Completed by Dan R Jost, Regional Fisheries Manager, Region II

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Dakotah Lake (33-2)

**County:** Hand

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 - December 2001

**Surface Area:** 12 Acres

**Management Class:** WWP

**Maximum Depth:** 20 Feet

**Mean Depth:** 8 Feet

**Legal Description:** Section 35, Township 112 N, Range 69 W

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### INVENTORY

Dakotah Lake is a twelve-acre impoundment 5 miles west and 5 miles south of Miller in central Hand County. The artificial lake was created in 1936 when the Civilian Conservation Corps constructed an earthen dam on Ree Creek. The Boy Scouts of America owned the impoundment and surrounding land from the time the lake was developed until the late 1980's. Ownership was acquired by the South Dakota Dept. of Game, Fish & Parks in 1990. Game, Fish & Parks has completed fisheries management on the lake since its construction.

The watershed for Dakotah Lake is approximately 2,240 acres or 3.5 square miles. Land use in the watershed is estimated at 75% pasture or hayland composed mostly of native grasses, 20% cultivated farm ground, and 5% woody draws. One small dugout lies within the watershed of Dakotah. From the outlet of Dakotah Lake, Ree Creek flows into Wolf Creek to the James River and eventually the Missouri River. Soils in the watershed are primarily sandy loam with some clay. Topography varies from nearly flat to moderate slopes. The immediate shoreline of Dakotah Lake is native grasses with steep, woody banks. Siltation is evident in small to moderate amounts in the upper third of the lake. Emergent vegetation, mainly bulrush, is found scattered around the entire shoreline with cattail and submergent vegetation found in the marsh area near the creek inlet. Access to the lake is gained from a county gravel road to a trail that leads to the one access area on the lake. A concrete boat ramp, in fair condition, is the only public use facility at Dakotah Lake.

Little information is available concerning the fishery at Dakotah Lake during the 1930s and 1940s. Existing records indicate bass, crappie, and bullhead were present and provided a moderate fishery. In 1959, the lake was chemically renovated in an attempt to eliminate all fish life. After the renovation Dakotah was managed as a put, grow and take rainbow trout fishery. Rainbow trout fingerlings were stocked on 22 occasions between 1961 and 1983. From 1983 to 1998, management of a put and take trout fishery

continued with rainbow catchables being stocked on annual and biannual basis. Re-infestation of undesirable species resulted in additional renovations in 1967 and 1992.

**Stocking record for Dakotah Lake, Hand County**

YEAR	NUMBER	SPECIES	SIZE
1987	3,000	RBT	CAT
1988	3,000	RBT	CAT
1989	2,830	RBT	CAT
1990	3,000	RBT	CAT
1991	5,230	RBT	CAT
1992	2,500	RBT	CAT
1993	2,000	RBT	CAT
1993	2,000	RBT	CAT
1994	2,000	RBT	CAT
1994	2,000	RBT	CAT
1995	5	RBT	ADT
1995	2,000	RBT	CAT
1995	2,000	RBT	CAT
1996	2,000	RBT	CAT
1996	1,880	RBT	CAT
1997	2,000	RBT	CAT
1997	2,000	RBT	CAT
1998	2,000	RBT	CAT
1998	1,760	RBT	CAT
2000	180	BLG	ADT

As a put and take rainbow trout fishery, Dakotah Lake was only moderately successful. Return rates of stocked fish to the creel were high during periods of favorable conditions and nearly nonexistent at other times. The reason for this variability was the over-summer survival, or lack of, for trout. In normal years, Dakotah Lake does not receive adequate "mixing" from wind agitation or runoff to keep the lake from stratifying. When the lake stratifies only the upper eight feet of the water column contains sufficient dissolved oxygen to support fish life. While warm water species can survive in this upper layer of the lake, trout are unable to remain in the oxygenated zone without exceeding their thermal tolerance.

A lake investigation was completed in 1998 to determine the condition of the rainbow trout population and if other species had entered Dakotah since the 1992 eradication. Angler reports had indicated that largemouth bass were present in the lake. Electrofishing efforts resulted in no trout but over 100 juvenile largemouth bass in 10 minutes. Trout stockings continued in 1998, but poor angler return and no recorded summer survival resulted in the cancellation of future stockings. Largemouth bass juveniles from Dakotah were used to stock other waters in Region II in 1999 and 2000. During the spring of 2001, only small, yearling largemouth were found to be present in the lake, the result of a severe winterkill. Prespawn adult largemouth were stocked in 2001 and management plans were revised to reflect a largemouth bass only fishery.

## MANAGEMENT GOAL

**To manage the fishery at Dakotah Lake to maximize angler opportunity.**

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## OBJECTIVES AND STRATEGIES

- Objective 1.** Increase the largemouth bass densities at Dakotah Lake to an electrofishing CPUE of 100 or greater and utilize as a source to stock other waters, while providing moderate angling opportunity.
- Strategy 1 a. Monitor largemouth bass population by means of nighttime electrofishing to determine population densities and size structure.
- Strategy 1 b. Stock largemouth bass adults as necessary to improve recruitment and provide a high density juvenile population.
- Strategy 1 c. Remove largemouth bass juveniles and stock in other public waters when densities are high enough to hinder growth.
- Objective 2.** Maintain Dakotah Lake as a largemouth only water without the presence of other species.
- Strategy 2a. Monitor all fish populations by means of nighttime electrofishing and angler reports to determine if undesirable species have- entered the lake.
- Objective 3.** Inform, receive and use public input to assist in the management of Dakotah Lake.
-

## **5 YEAR OPERATIONAL PLAN**

1. Conduct one hour of nighttime electrofishing in 2003 and 2006 to monitor largemouth bass population density and size structure and the presence of any other species in Dakotah Lake.
2. Stock largemouth bass adults at a rate of 10/ acre if density of bass is less than 30 stock length or greater fish/hour.
3. Utilize as a source of largemouth bass juveniles to stock other waters if densities are higher than 100 fish/hour of nighttime electrofishing.
4. The local Conservation Officer and other GF&P staff should solicit input from all sources and provide information to the Regional Fisheries Manager on a timely basis.
5. Conduct a thorough evaluation of the present management plan and complete a new plan by January, 2007.

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Completed by Dan R Jost, Regional Fisheries Manager, Region II

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Chapelle Lake (38-1)

**County:** Hyde

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 - December 2001

**Surface Area:** 34 Acres

**Management Class:** WSP

**Maximum Depth:** 16 Feet

**Mean Depth:** 6 Feet

**Legal Description:** Section 22, Township 111 N, Range 73 W

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### INVENTORY

Chapelle Lake is a 34-acre impoundment 8 miles south and 3/4 mile east of Holabird in eastern Hyde County. The artificial lake was created in 1935 when the Works Progress Administration (WPA) constructed an earthen dam on Chapelle Creek. Ownership of the dam is private with easements to the State of South Dakota allowing public use. Game, Fish & Parks has managed the fishery at Chapelle since its construction.

The watershed for Chapelle Lake is approximately 18,560 acres to the north and east of the impoundment. Land use in the watershed is 80% native grasses utilized as pasture, 15% cultivated cropland, and 5% wooded areas. Soils are mainly clay and topography varies from nearly flat to slightly rolling. Siltation from the watershed is evident in the upper third of Chapelle Lake. From the outlet of the impoundment, water flows from Chapelle Creek to the Missouri River. Emergent vegetation, primarily bulrush, surrounds the entire shoreline. Submergent vegetation grows to a depth of five feet and is found throughout the lake. Access to Chapelle is via an unmaintained dirt trail that leads from a county road to the west. There are no boat launch or other public use facilities at Chapelle Lake.

From 1935 to 1955 Chapelle Lake was managed as a bass/panfish water with several stockings of largemouth bass and black crappie being completed. Historical data indicates that Chapelle provided a good bass fishery prior to 1950. Declining gamefish populations and increasing numbers of black bullhead resulted in the lake being chemically rehabilitated in 1953 and again in 1959. Since 1960 Chapelle has been managed for northern pike and yellow perch. Though intensive stocking efforts have taken place, Chapelle Lake has never developed a good gamefish population. This is primarily due to the lake's high nutrient levels and the lack of wind agitation causing the lake to stratify. This stratification results in low dissolved oxygen levels and frequent summer and winter fish kills.

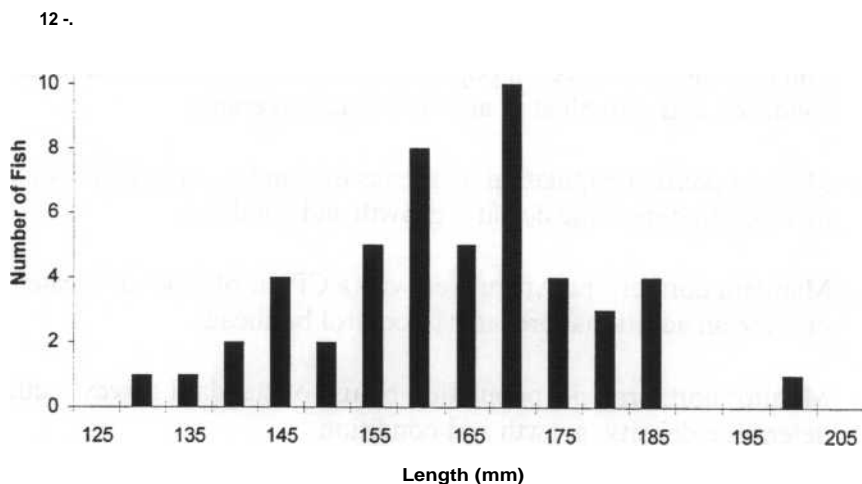


### Stocking record for Chapelle Lake, Hyde County

YEAR	NUMBER	SPECIES	SIZE
1971	22,500	NOP	FRY
1982	17,500	NOP	FRY
1982	400	YEP	ADT
1983	17,000	NOP	FRY
1983	200	YEP	ADT
1984	22,500	NOP	FRY
1985	2,000	NOP	FGL
1985	20,000	NOP	FRY
1985	400	WHC	ADT
1986	22,500	NOP	FRY
1986	2,250	YEP	FGL
1987	17,000	NOP	FRY
1989	2,000	LMB	FGL
1990	6,000	YEP	FGL
1991	309	BLC	ADT
1992	2,750	NOP	FGL
1993	3,400	NOP	FGL
1995	44	NOP	ADT
1995	3,400	NOP	FGL
1998	6,800	NOP	FGL

Chapelle Lake was last surveyed in 1997. Eight, 24-hour, 1/2 inch frame net sets were used to sample the adult fish population. Results were typical of those seen over the past twenty years. Black bullhead dominated the population with a CPUE of 183.8. All bullheads were small with no fish over stock length. Six yellow perch and one northern pike were the only other species present.

### Chapelle Lake 1997 Black Bullhead



**Total catch of eight, 24 hour, 3/4-inch frame nets at Chapelle Lake, Hyde County, 1997**

Spec.	No.	%	CPUE (80%CI)	PSD	Stock Mean Wr
BLB	1,470	99.5	183.8 (125.6)	0	91.5(1.8)
YEP	6	0.4	0.8 (0.7)	83	106
NOP	1	0.1	0.1 (0.1)	N/A	N/A

## MANAGEMENT GOAL

**To manage the fishery at Chapelle Lake to maximize angler opportunity.**

## OBJECTIVES AND STRATEGIES

- Objective 1.** Decrease black bullhead densities to a trap-net CPUE of 50 or less.
- Strategy 1 a. Increase predator densities to a level that effectively limits bullhead recruitment.
- Strategy 1b. Physically remove black bullheads to reduce densities.
- Objective 2.** Establish Chapelle Lake's largemouth bass population at a nighttime electrofishing CPUE of 20 or greater
- Strategy 2a. Stock largemouth bass adults to introduce the species to the lake.
- Objective 3.** Enhance the yellow perch population to a CPUE of between 6 and 12 with condition and growth at or above the state average.
- Strategy 3a. Monitor panfish population by means of standard population survey methods to determine density, growth and condition.
- Objective 4.** Maintain northern pike densities with a CPUE of 5/net or greater to provide an additional predator to control bullheads.
- Strategy 4a. Monitor northern pike population by use of standard survey methods to determine density, growth and condition.
- Strategy 4b. Stock with northern pike fingerlings, if necessary, to supplement existing population.
- Objective 5.** Inform, receive, and use public input to assist in the management of Chapelle Lake.

## **5 YEAR OPERATIONAL PLAN**

1. Conduct a standard fisheries population survey in 2004 utilizing eight, 24-hour frame-net sets to monitor all fish species.
2. Utilize Department crews to remove all black bullheads captured during the 2004 survey.
3. If netting survey reveals a yellow perch CPUE of less than 5, stock with perch adults at a rate of 10/acre.
4. If standard survey reveals a northern pike CPUE of 2 or less, stock with fingerlings at a rate of 100/acre.
5. The local Conservation Officer and other GF&P staff should solicit input from all sources and provide information to the Regional Fisheries Manager on a timely basis.
6. Conduct a thorough evaluation of the present management plan and complete a new plan by January, 2007.

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Completed by Dan R Jost, Regional Fisheries Manager, Region II

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Reliance Lake (45-6)

**County:** Lyman

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-20-R-30

**Date:** January 1997 -December 2001

**Surface Area:** 41.5 Acres

**Management Class:** WSP

**Maximum Depth:** 11 Feet

**Mean Depth:** 5.5 Feet

**Legal Description:** Sections 16 & 21, Township 105 N, Range 73 W

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### INVENTORY

Reliance Lake, also know as Reliance Dam, is a 41.5-acre impoundment located on the north edge of the town of Reliance in east central Lyman County. The artificial lake was created in 1934 when the Works Project Administration completed construction of an earthen dam on the upper end of American Crow Creek. To allow for the construction, easement was granted to the State of South Dakota for the artificial lake and a strip of land 12 feet above the high water contour for public-use. Easements are recorded with the Lyman County Register of Deeds (Misc. Book 10, page 303).

The watershed for Reliance Lake is relatively small at 3,840 acres or six square miles. Topography in the watershed is near level to gently rolling with native grasses, used as hay or pastureland, making up 64% of the land. The remain watershed consists of 33% cultivated agricultural land, 2% roads, residences and tree belts, and 1% livestock feeding area. Several dugouts and small dams are present in the watershed, but no major water bodies. From the outlet of Reliance Dam, American Crow Creek flows into Lake Francis Case near Oacoma. Soils in the watershed are primarily of gumbo/clay type. Though a siltation survey has never been conducted at Reliance Dam, the siltation rate is thought to be moderate. Livestock feeding areas and cultivated land in the watershed have resulted in the presence of large amounts of nutrients and suspended solids, giving the lake a high trophic state classification. Emergent vegetation, mainly bulrush is found along the entire shoreline except for the dam grade. Due to turbid water, very little submergent vegetation is present. Access to Reliance Dam is good with the City maintaining a small park adjacent to the lake. The concrete boat ramp is in adequate condition for the amount of boat traffic received. Considerable erosion is evident around the wing walls of the spillway.

In its early years the lake provided good fishing for largemouth bass and black bullheads. Records from the mid-1960s indicate bluegill provided quality panfishing opportunity. Bass and bluegills have been the dominant species in Reliance ever since. Reliance Lake has had a very stable fish population for the past 15 years. The last recorded stocking was of largemouth bass in 1985. Several surveys from 1987 to present indicate a balanced bass/bluegill relationship with yellow perch; sunfish, northern pike and black bullheads also present.

**Stocking record for Reliance Lake, Lyman County**

YEAR	NUMBER	SPECIES	SIZE
1944	1,500	LMB	FGL
1972	1,000	LMB	FGL
1977	2,500	LMB	FGL
1977	120,000	NOP	FRY
1980	2,500	LMB	FGL
1982	2,000	LMB	FGL
1985	24	LMB	ADT

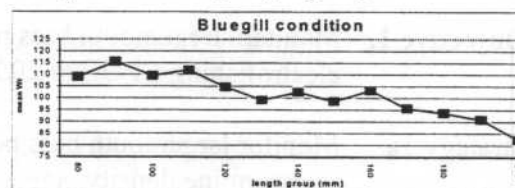
Reliance Lake was most recently surveyed in 2001. Eight, 24-hour,  $\frac{3}{4}$  inch frame-net sets in June and four, ten-minute electrofishing transects in October were utilized to sample the adult fish population. Bluegill was the most numerous species sampled with a frame-net CPUE of 52.3. Bluegills had a PSD of 72 and a mean Wr of 97.7. Bluegill condition was high for smaller fish but declined dramatically as the fish grew larger. Largemouth bass densities were relatively high with a CPUE of 46.5 fish/hour of nighttime electrofishing. Bass PSD was 79 with the mean Wr of 100.8. As with the bluegill, bass condition declined as the fish got larger. The Wr for fish over preferred size was only 85.

**Largemouth bass condition by size category**

Description	Weighted Mean Wr	90% CI (+or-)
Substock	102.7	-
Stock	100.8	3.48
Stock to Quality	111.9	5.36
Quality to Preferred	101.2	2.09
Preferred to Memorable	85.7	8.85

**Bluegill condition by length group**

**bluegill condition by length group**



Black bullheads have been present in Reliance Lake since the first recorded fish survey. In 2001 a CPUE of 21 bullheads per frame-net was recorded. Bullhead size structure was good with growth above the state average. Yellow perch, channel catfish, northern pike, and sunfish were also sampled.

**Total catch of four, ten-minute periods of electrofishing on Reliance Lake, Lyman County, 2001**

Spec.	No.	CPUE fish/hr (80%CI)	PSD (90%CI)	Stock Mean Wr (90%CI)
LMB	31	46.5(19.0)	79(15)	100.8(3.5)

**Total catch of eight, 24 hour, 3/4-inch frame nets at Reliance Lake, Lyman County, 2001**

Spec.	No.	%	CPUE (80%CI)	PSD (90%CI)	Stock Mean Wr (90%CI)
BLB	90	28.0	11.3(4.7)	71(8)	91.5(1.8)
BLG	168	52.3	21.0(6.7)	72(7)	97.7(0.2)
CCF	25	7.8	3.1(1.2)	0(-)	-
HYB	14	4.4	1.8(1.2)	-	-
GOS	4	1.2	0.5(0.5)	-	-
LMB	5	1.6	0.6(0.5)	100(-)	89.0(8.9)
NOP	3	0.9	0.4(0.3)	33(-)	92.8(8.9)
YEP	12	3.7	1.5(0.7)	92(15)	86.7(3.0)

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## MANAGEMENT GOAL

**To manage the fishery at Reliance Lake to maximize angler opportunity.**

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## OBJECTIVES AND STRATEGIES

- Objective 1.** Maintain largemouth bass population densities with nighttime electrofishing CPUE of 20/hour and a PSD of 40 or greater.
- Strategy 1 a. Monitor largemouth bass population by means of standard survey methods to determine density, age, growth, size structure, and condition.
- Objective 2.** Maintain bluegill PSD values between 50 and 80 with growth and condition factors at or above the state average.

Strategy 2a. Maintain largemouth bass at densities high enough to limit panfish recruitment and prevent overpopulation and slow growth rates.

**Objective 3.** Inform, receive, and use continuing input from the public and other agencies to assist in the management of Reliance Lake.

**Objective 4.** Maintain black bullhead population with a CPUE of 20 or less with growth at or above the state average.

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### **5 YEAR OPERATIONAL PLAN**

1. Conduct a standard fisheries population survey in 2004 utilizing ten, 24 hour,  $\frac{3}{4}$  inch frame-net sets and at least 1 hour of nighttime electrofishing to monitor all fish species.
2. The local Conservation Officer and other GF&P staff should solicit input from private and public sources and provide input back to the Regional Fisheries Manager on a timely basis.
3. Conduct a thorough evaluation of the present management plan and complete a new plan by January, 2005.

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Completed by Dan R Jost, Regional Fisheries Manager, Region II

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Simon Dam (54-1)

**County:** Potter

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 - December 2001

**Surface Area:** 71 Acres

**Management Class:** WSP

**Maximum Depth:** 15 Feet

**Mean Depth:** 9 Feet

**Legal Description:** Sections 29 & 32, Township 120 N, Range 74 W

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### INVENTORY

Simon Dam is a 71-acre impoundment  $4\frac{1}{2}$  miles south and  $1\frac{1}{2}$  mile west of Hoven in northern Potter County. The artificial lake was named after S. F. Simon, the landowner at the time of construction. Simon Dam was created in 1938 when the Works Project Administration (WPA) completed construction of an earthen dam on an unnamed tributary of Swan Creek. To allow for the construction of the dam grade and creation of the lake, three public-use easements and one release of easement to the State of South Dakota were recorded with the Potter County Register of Deeds (Misc. Book 9, pages 397, 499 and 504). The easements involved the lake and a strip of land varying from 66 feet to 12 feet above the high-water contour.

The watershed of Simon Dam is approximately 36,640 acres or 51 square miles. Land use in the watershed is 70% cultivated agricultural land consisting of small grains and row crops, and 30% hay or pastureland, land enrolled in the Conservation Reserve Program, farmsteads, tree belts and roads. Several small dams and dugouts lie within the watershed of Simon Dam, but there are no major waterbodies. From the outlet of Simon Dam, the creek flows into Swan Lake and eventually to Swan Creek and Lake Oahe. The topography of the watershed is nearly level to sloping and rolling. Soil types vary from loamy with gravel and sand subsoil, to deep silt, to heavy clay soils on poorly drained bottomland. Though a siltation survey has never been conducted at Simon Dam, it is believed that siltation is not a major problem with only the extreme upper end of the impoundment being affected. Emergent vegetation is found along about half of the lake's shoreline. Submergents are found scattered in shallow areas and grow to a depth of approximately four feet. Access is from SD Hwy 47 via a gravel road and a trail along the majority of the east side of the lake. A concrete-plank boat ramp and dock maintained by the local sportsman's club are the only public-use facilities at Simon Dam.



Records indicate that from the early 1950s to 1964 Simon Dam provided good fishing opportunity, mainly for crappie and northern pike. Once the construction of nearby Lake Oahe was completed fishing pressure declined as more anglers began to utilize the large reservoir. Black crappie continued to be the primary panfish until 1994 when yellow perch began to dominate the panfish population. Northern pike have been present since the lake was created and until recently were the most abundant predator. Numerous stockings of largemouth bass have occurred since 1975. Little recorded information is available concerning the bass population until recent years due to the lack of electrofishing prior to the 1990s. Black bullheads have consistently had higher than desired densities since 1964. Despite attempts to increase bass numbers through stocking, bullheads have been at nuisance levels the majority of the past forty years. This has detrimentally effected gamefish populations. In 2001, a fifteen-inch size limit was placed on largemouth bass and stockings of fingerling and adult bass were scheduled in yet another attempt to balance the predator/bullhead relationship. In addition, 10,164 pounds of black bullheads were removed from the lake in the fall of 2001 by trapnetting.

**Stocking record for Simon Dam, Potter County**

<b>YEAR</b>	<b>NUMBER</b>	<b>SPECIES</b>	<b>SIZE</b>
1986	5,500	LMB	FGL
1986	5,500	YEP	FGL
1987	360	LMB	ADT
1987	150	LMB	JUN
1988	431	LMB	ADT
1988	5,500	LMB	FGL
1989	314	LMB	ADT
1989	4,000	LMB	FGL
1990	5,500	LMB	FGL
1991	3,000	LMB	FGL
1993	5,500	LMB	FGL
1997	100	LMB	ADT
1997	4,100	LMB	FGL
1997	1,775	WAE	FGL
1997	1,600	YEP	ADT
1998	40	LMB	ADT
1998	4,100	LMB	ADT
1998	310	LMB	JUN
2001	500	WAE	FGL
2001	93	CCF	ADT

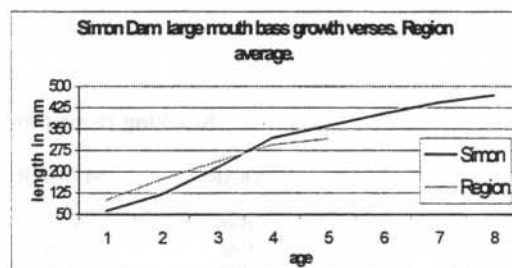
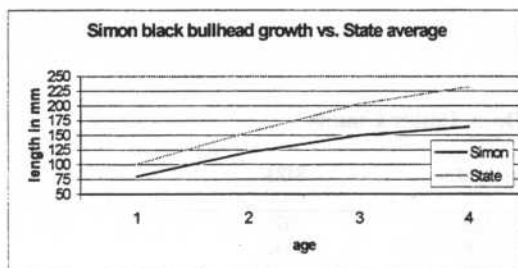
Simon Dam was most recently surveyed in 2001. Ten, 24-hour, frame-net sets in August and six, 10-minute electrofishing transects in September were utilized to sample the adult fish population. Black bullheads comprised 99.6% of the catch with a frame-net CPUE of 479.6. PSD was 1 and growth was below the state average. Yellow perch were present in low numbers with a CPUE of 1.4. PSD was 71 with growth well above the state average. Northern pike were the only other species sampled with a CPUE of .5. Electrofishing efforts yielded 19 bass/hour with a PSD of 100. Bass growth was slow for the first three years then increased well above the state average by age four. This is thought to be a result of the stocking of stunted adult bass into Simon in 1997 and 1998.

**Total catch of six, 10-minute periods of electrofishing at Simon Dam, Potter County, Sept. 28, 2001.**

			<u>80% CI</u>	<u>PSD</u>	<u>Stock Mean Wr</u>
			<u>(90% CI)</u>	<u>(90% CI)</u>	<u>(90% CI)</u>
LMB	19	100	19.0(15.1)	100(-)	116.6

**Total catch of ten, 24 hour, 3/4-inch frame nets at Simon Dam, Potter County, August 6, 2001.**

<u>Spec.</u>	<u>No.</u>	<u>%</u>	<u>CPUE</u>	<u>PSD</u>	<u>Stock Mean Wr</u>
			<u>(80% CI)</u>	<u>(90% CI)</u>	<u>(90% CI)</u>
BLB	4796	99.6	479.6(156.1)	1(-)	78.2(1.5)
NOP	5	0.1	0.5(0.3)	0(-)	80.9(47.4)
YEP	14	0.3	1.4(0.7)	71(23)	104.2(2.7)



## MANAGEMENT GOAL

**To manage the fishery at Simon Dam to maximize angler opportunity.**

## OBJECTIVES AND STRATEGIES

**Objective 1.** Decrease black bullhead densities to a trap-net CPUE of 50 or less.

Strategy 1 a. Increase predator densities to a level that effectively limits bullhead recruitment.

Strategy 1b. Physically remove black bullheads to reduce densities.

- Objective 2.** Maintain Simon Dam's largemouth bass population at a nighttime electrofishing CPUE of 20 or greater fish over stock length.
- Strategy 2a. Monitor largemouth bass by means of nighttime electrofishing to determine population density and size structure.
- Strategy 2b. Stock largemouth bass adults, if necessary, to supplement existing population.
- Objective 3.** Increase yellow perch population to a CPUE of between 5 and 15 with condition and growth at or above the state average.
- Strategy 3a. Monitor perch population by means of standard population survey methods to determine density, growth and condition.
- Objective 4.** Inform, receive, and use public input to assist in the management of Simon Dam.
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## **5 YEAR OPERATIONAL PLAN**

1. Conduct a standard fisheries population survey in 2004 utilizing eight, 24-hour frame-net sets, and at least 1 hour of nighttime electrofishing to monitor all fish species.
  2. Utilize Department crews to conduct fish removal project in 2002 to remove 100 lbs. of bullheads/acre and remove all black bullheads captured during the 2004 survey.
  3. If netting survey reveals a yellow perch CPUE of less than 5, stock with perch adults at a rate of 10/acre.
  4. If nighttime electrofishing reveals a CPUE of 20/hour or less, stock with adult bass at a rate of 10/acre.
  5. Stock with largemouth bass fingerlings at a rate of 100/acre and adults at a rate of 10/acre in 2002.
  6. The local Conservation Officer and other GF&P staff should solicit input from all sources and provide information to the Regional Fisheries Manager on a timely basis.
  7. Conduct a thorough evaluation of the present management plan and complete a new plan by January, 2007.
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Completed by Dan R Jost, Regional Fisheries Manager, Region II

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Sully Lake (59-2)

**County:** Sully

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 - December 2001

**Surface Area:** 205 Acres

**Management Class:** WWM

**Maximum Depth:** 10 Feet

**Mean Depth:** 5.5 Feet

**Legal Description:** Section 2, Township 114 W, Range 78 W and Sections 35 & 36,  
Township 115 N, Range 78 W

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### INVENTORY

Sully Lake is a 205-acre impoundment 5.5 miles west of Onida in central Sully County. The artificial lake was named after General Alfred Sully, an early military leader whose name was bore by Fort Sully, a military post established in 1866 near the banks of the Missouri River, and later Sully County. Sully Lake was created in 1936 when the Works Progress Administration (WPA) completed construction of an earthen dam on Okobojo Creek. To allow for the construction of the dam, four public use easements to the State of South Dakota for the lake and a strip of land 12 feet above the high-water mark were recorded with the Sully County Register of Deeds, (Misc. Book 10, pages 580, 581, 583 & 584). In addition the Department of Game, Fish and Parks purchased 3.89 acres of land on the southwest edge of the dam grade.

The watershed of Sully Lake is approximately 81,280 acres or 131 square miles. Land use is 70% cultivated farmland consisting of small grains and row crops, and 30% hay or pastureland, land enrolled in the Conservation Reserve Program, farmsteads, tree belts and roads. Along with several small dams and dugouts, three larger bodies of water lie within the watershed of Sully Lake. These are Potts Dam in Potter County and Mundt and Cottonwood Lakes in Sully County. Okobojo Creek flows southwest from the outlet of Sully Lake into Okobojo Lake and eventually into Lake Oahe. The topography of the watershed varies from nearly level to gently rolling with well-drained silt and loamy soils. The high siltation rate for Sully Lake results in moderate to high nutrient levels and reduced maximum water volume. Emergent vegetation, mainly bulrush, is found along a large portion of the shoreline as well as in the upper half of the lake. Submergent vegetation is found throughout the lake and reaches nuisance levels during summer months. Access to Sully Lake is via dirt trails leading from a paved county road to the shoreline on the east and west sides of the lake. There are no boat launch or other public use facilities at Sully Lake. The concrete spillway was rebuilt in 2001.

For the first several years, Sully Lake was a very important for local recreation. The lake was utilized for fishing, camping, boating and swimming. The local community established a recreation area on the west side of the lake complete with campsites, fire places and picnic tables. Several lots were plotted on the lake, however, only two cabins were built. These facilities have long since deteriorated and only remnants remain. Prior to 1950 records indicate good populations of largemouth bass and crappie with high angling pressure for these species. Since then fluctuating water levels and decreasing volume due to siltation have caused the fishery to be erratic at best. From 1950 to 1990, Sully Lake was considered a marginal water with northern pike and panfish being the primary species managed. Consistent water levels in the early 1990's prompted fisheries managers to reintroduce largemouth bass to the lake. Bass have been present from high to moderate densities since, but it is understood if the water levels decline so will the bass population. Though walleyes have not recently been stocked in Sully Lake, they were present in the 1998 and 2001 surveys. It is thought that walleye entered via the watershed from Cottonwood Lake during high runoff the spring of 1997. Since 1950, the largest biological problem at Sully Lake has been an overabundance of black bullhead.

**Stocking record for Sully Lake, Sully County**

YEAR	NUMBER	SPECIES	SIZE
1987	10,000	NOP	FGL
1987	3,049	YEP	FGL
1989	930	BLC	ADT
1989	350	WHC	ADT
1990	1,000	LMB	ADT
1990	2,500	LMB	JUN
1990	2,500	YEP	FGL
1997	20,000	LMB	FGL
1997	100,000	NOP	FRY
1997	442	YEP	ADT .

Sully Lake's fish population was most recently surveyed in June of 2001 using ten, 24-hour,  $\frac{3}{4}$ -inch frame-net sets. Black bullheads comprised 96.7% of the catch with a CPUE of 465. PSD was 0. Bluegill and crappie were present in low numbers with PSDs below that of a balanced population. Largemouth bass, walleye and northern pike were all present indicating a healthy predator base in the lake. With a relatively high number of predators, it is difficult to explain the increase in bullhead density and the decrease in panfish quality. Electrofishing was not completed on Sully Lake due to vegetation and difficulty launching a boat.

Total catch of **ten**, 24 hour, 3/4-inch frame nets at Sully Lake, Sully County, 2001.

Spec.	No.	%	CPUE (80%CI)	PSD (90%CI)	Stock Mean Wr (90%CI)
BLB	4654	96.7	465.4(114.3)	0(-)	-
BLC	71	1.5	7.1(2.1)	8(6)	104.0(0.16)
BLG	7	0.1	0.7(0.6)	14(28)	118.8(4.34)
CAP	39	0.8	3.9(2.0)	18(11)	88.8(0.73)
LMB	2	0.0	0.2(0.2)	-	95.4(22.66)
NOP	26	0.5	2.6(0.7)	92(9)	83.2(4.39)
WAE	11	0.2	1.1(0.5)	64(27)	80.7(2.18)
WHS	1	0.0	0.1(0.1)	-	93.8(-)

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## MANAGEMENT GOAL

**To manage the fishery at Sully Lake to maximize angler opportunity.**

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## OBJECTIVES AND STRATEGIES

**Objective 1.** Decrease black bullhead densities to a trap-net CPUE of 50 or less.

Strategy 1 a. Increase predator densities to a level that effectively limits bullhead recruitment.

Strategy 1 b. Physically remove black bullheads to reduce densities.

**Objective 2.** Maintain Sully Lake's largemouth bass population at a nighttime electrofishing CPUE of 20 or greater.

Strategy 2a. Collect data on largemouth bass by means of nighttime electrofishing to determine current population density and size structure.

Strategy 2b. Stock largemouth bass adults, if necessary, to supplement existing population.

**Objective 3.** Enhance the panfish (bluegill and crappie) population to a CPUE of between 15 and 25 with condition and growth at or above the state average.

Strategy 3a. Monitor panfish population by means of standard population survey methods to determine density, growth and condition.

**Objective 4.** Maintain northern pike densities with a CPUE of 5/net or greater to provide a additional predator to control bullheads.

Strategy 4a. Monitor northern pike population by use of standard survey methods to determine density, growth and condition.

Strategy 4b. Stock with northern pike fingerlings, if necessary, to supplement existing population.

**Objective 5.** Inform, receive, and use public input to assist in the management of Sully Lake.

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## **5 YEAR OPERATIONAL PLAN**

1. Conduct a standard fisheries population survey in 2004 utilizing eight, 24-hour frame-net sets, and at least one hour of nighttime electrofishing to monitor all fish species.
  2. Utilize Department crews to remove all black bullheads captured during the 2004 survey.
  3. If netting survey reveals a panfish CPUE of less than 10, stock with bluegill adults at a rate of 10/acre.
  4. If nighttime electrofishing reveals a CPUE of 10/hour or less, stock with adults at a rate of 10/acre.
  5. If standard survey reveals a northern pike CPUE of 2 or less, stock with fingerlings at a rate of 100/acre.
  6. The local Conservation Officer and other GF&P staff should solicit input from all sources and provide information to the Regional Fisheries Manager on a timely basis.
  7. Conduct a thorough evaluation of the present management plan and complete a new plan by January 2007.
- 

Completed by Dan R Jost, Regional Fisheries Manager, Region II

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Beaulieu Lake (60-4)

**County:** Tripp

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 - December 2001

**Surface Area:** 26 Acres

**Management Class:** WSP

**Maximum Depth:** 15 Feet

**Mean Depth:** 11.5 Feet

**Legal Description:** Section 14, Township 98 N, Range 76 W

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### INVENTORY

Beaulieu Lake is a 26-acre impoundment 1 1/2 miles east and 3 1/2 miles south of Winner in central Tripp County. The artificial lake was named after Peter Beaulieu, one of the founding fathers of Winner. To create Beaulieu an earthen dam on the upper end of Thunder Creek was constructed by the Dept. of Game, Fish & Parks in 1947. The entire lake lies within an 80-acre Game Production Area owned by GF&P.

The watershed for Beaulieu is relatively small at approximately 1,280 acres or 2 square miles. Land use within the watershed is 60% cultivated farmland, 20% native grasses utilized primarily as pasture, and 5% roads, residences and assorted hardwoods. A livestock feeding area lies directly above Beaulieu in the watershed and causes high amounts of nutrients to enter the lake. Only one small dam is located on the watershed. Topography is gently rolling to steep slopes with soils being sandy loams and clays that can be subject to wind and water erosion. The primary degrading factor is siltation during periods of runoff that carries nutrients from the feedlot into the lake. This provides excess nitrates and phosphates which result in increased aquatic vegetation growth and algae blooms. From the outlet of Beaulieu, water flows down Thunder Creek to the White River and eventually the Missouri River. Aquatic vegetation is common at Beaulieu Lake. Emergent vegetation, cattail and bulrush, is found along a majority of the shoreline with the heaviest amounts in the upper 1/3 of the lake. Submergent vegetation is found near the shoreline in a depth to 5 feet. Access is good with a concrete boat ramp just off a county gravel road. There are no other public use facilities at Beaulieu Lake.

Beaulieu Lake has provided recreational opportunity since the time of its construction. Proximity to the City of Winner and moderately good access has allowed for greater use than other waters with similar characteristics. Fishing pressure and success have varied throughout the years with good historical reports for catfish, northern pike, bullheads, and largemouth bass. Crappies, bluegill and perch have been of small to average size most years. The first recorded fish stocking at Beaulieu Lake was in 1951 when largemouth

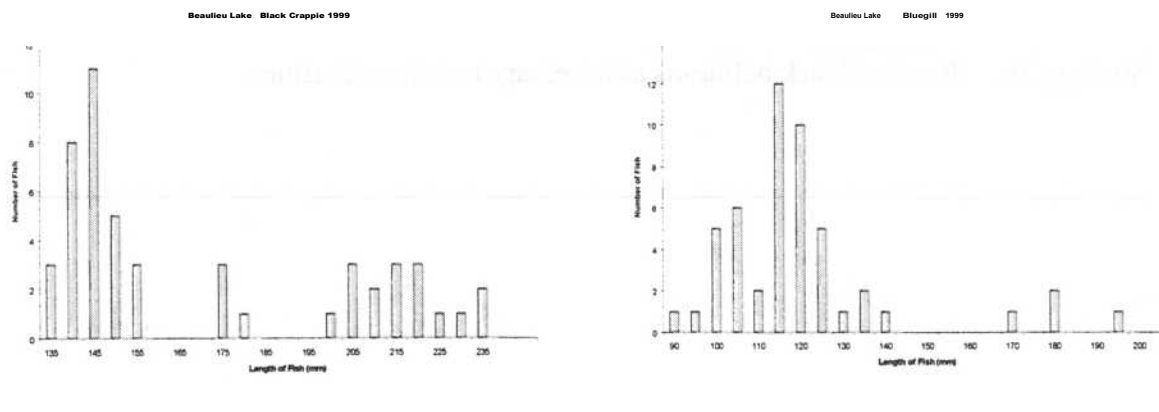


bass and bluegill were introduced. Black crappie, channel catfish, black bullhead, walleye and yellow perch were also stocked in the 1950s. Bluegill, channel catfish, and largemouth bass were periodically stocked during the following decade. There were no recorded fish stockings between 1968 and 1982, since then largemouth bass have been stocked on several occasions to increase predator densities and increase panfish growth. A severe winterkill was recorded during the spring of 2001 and largemouth bass fingerlings were stocked the following summer.

#### Stocking record for Beaulieu Lake, Tripp County

YEAR	NUMBER	SPECIES	SIZE
1982	1,350	CCF	FGL
1982	1,500	LMB	FGL
1987	1,300	LMB	FGL
1988	1,300	LMB	FGL
1988	50,000	NOP	FRY
1989	2,600	LMB	FGL
1990	70	LMB	ADT
1990	1,050	YEP	ADT
1991	1,300	NOP	FGL
1992	7,500	LMB	FGL
1993	100	LMB	ADT
1993	84	LMB	ADT
1993	20	LMB	ADT
1993	2,600	LMB	FGL
2001	2,600	LMB	FGL

Beaulieu Lake was most recently surveyed in 1999 utilizing eight,  $\frac{3}{4}$ -inch, 24-hour trap nets to monitor the adult fish population. Black crappies were the most abundant species sampled making up 75.5% of the total catch. Crappies had a CPUE of 235.5. The fish were small with a PSD of 32 and a Wr of 99. The majority of the remainder of the catch was made up by bluegill. A CPUE of 64.3 was recorded with a PSD of 8, indicating a stunted population. Black bullhead, green sunfish, yellow perch, largemouth bass, and northern pike were also sampled. Electrofishing in 2002 revealed the only fish remaining in the lake were largemouth bass stocked after the 2001 winterkill.



## MANAGEMENT GOAL

**To manage the fishery at Beaulieu Lake to maximize angler opportunity.**

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## OBJECTIVES AND STRATEGIES

- Objective 1.** Increase largemouth bass densities to a nighttime electrofishing CPUE of 50 or greater.
- Strategy 1a. Monitor largemouth bass population by means of nighttime electrofishing to determine current density and size structure.
- Strategy 1b. Stock largemouth bass adults, if necessary, to supplement existing population.
- Objective 2.** Increase black crappie densities to a post winterkill trap net CPUE of 15 to 25 with growth and condition at or above the state average.
- Strategy 2a. Monitor black crappie population by means of standard survey to determine post winterkill density and size structure.
- Strategy 2b. Stock black crappie adults, if necessary, to supplement existing population.
- Objective 3.** Maintain post winterkill population of black bullhead at a CPUE of 10 or less.
- Strategy 3a. Maintain largemouth bass densities high enough to limit bullhead recruitment.
- Strategy 3b. Remove black bullheads as necessary to reduce densities.
-

## **5 YEAR OPERATIONAL PLAN**

1. Conduct standard fisheries population surveys in 2002 and 2005 utilizing eight, 24-hour frame net sets and at least one hour of nighttime electrofishing to monitor all fish species.
  2. If nighttime electrofishing yields a CPUE of 30 bass per hour or less, stock with largemouth adults at a rate of 10/acre.
  3. If netting survey reveals a black crappie CPUE of 10 or less, stock with adults at a rate of 10/acre.
  4. Remove all black bullheads captured during the 2002 and 2005 lake surveys.
  5. The local Conservation Officer and other GF&P staff should solicit input from all sources and provide information regarding the management of Beaulieu Lake to the Regional Fisheries Manager in a timely fashion.
  6. Conduct a thorough evaluation of the present management plan and complete a new plan by January, 2007.
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Completed by Dan R Jost, Regional Fisheries Manager, Region II

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Dog Ear Lake (60-8)

**County:** Tripp

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 - December 2001

**Surface Area:** 254 Acres

**Management Class:** WWM

**Maximum Depth:** 8 Feet

**Mean Depth:** 4.5 Feet

**Legal Description:** Section 1. Township 96 N, Range 77 W; Section 6, Township 96 N, Range 76 W; Sections 35, 36. Township 97 N, Range 77 W

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### INVENTORY

Dog Ear Lake is a 254-acre natural body of water located 13 miles south and 2 miles west of Winner in southern Tripp County. The lake is also known as Big Dog Ear and the origin of the name is unknown. The south half of Section 36, Township 97, Range 77 is owned by the Dept. of Game, Fish & Parks. The remainder of the land adjacent to the shoreline is privately owned. The public has always had access to the lake as Section 36 was in control of School and Public Lands before sale to GF&P.

The watershed of Dog Ear is approximately 14,080 acres or 22 square miles. Land use in the watershed is 70% native grasses utilized as pasture and hay land, 15% cultivated agricultural land, 10% scattered hardwoods, and 5% roads, farmsteads, and tree belts. There are several small dams and dugouts, but no major water bodies in the watershed. Topography is nearly level to gently rolling with soils being primarily of sandy-loam type. Very little siltation or nutrient contamination from the watershed is apparent at Dog Ear Lake. From the outlet of Dog Ear water flows to the Keya Paha River, the Niobrara River and eventually to the Missouri River. Emergent vegetation is scattered along the shoreline and heaviest at the east end of the lake. Submergent vegetation is found in the entire lake and becomes extremely dense during summer months to the point of restricting boat travel. A concrete boat ramp is located at the lake but is only usable during high-water conditions. There are no other public use facilities at Dog Ear Lake, although a park/picnic area used to be maintained on the west edge of the lake.

Very little historical information is available concerning the fishery at Dog Ear Lake prior to 1960. The earliest recorded fisheries management activity took place in 1921 when 300 largemouth fingerlings were stocked. Black crappie, bluegill and black bullheads were also stocked during the following ten years. Intensive stockings of

largemouth bass, crappie, yellow perch, and bullhead were completed in 1945 and again in 1953. It can only be assumed that these followed winterkill events. Since 1970, Dog Ear Lake has primarily been managed with northern pike and yellow Perch on a winterkill basis. Dog Ear has provided excellent fishing opportunity during periods of sustained high water levels. In recent years largemouth bass have developed a population with a high enough quality to attract bass anglers, even to the point of holding local bass club tournaments. A fish kill, resulting from a severe winter, was reported in the spring of 2001. Largemouth bass adults and juveniles, northern pike fry, and prespawn yellow perch adults were stocked. A fisheries population survey was scheduled for 2002 to monitor success of the 2001 stockings but low water conditions forced the cancellation of the survey.

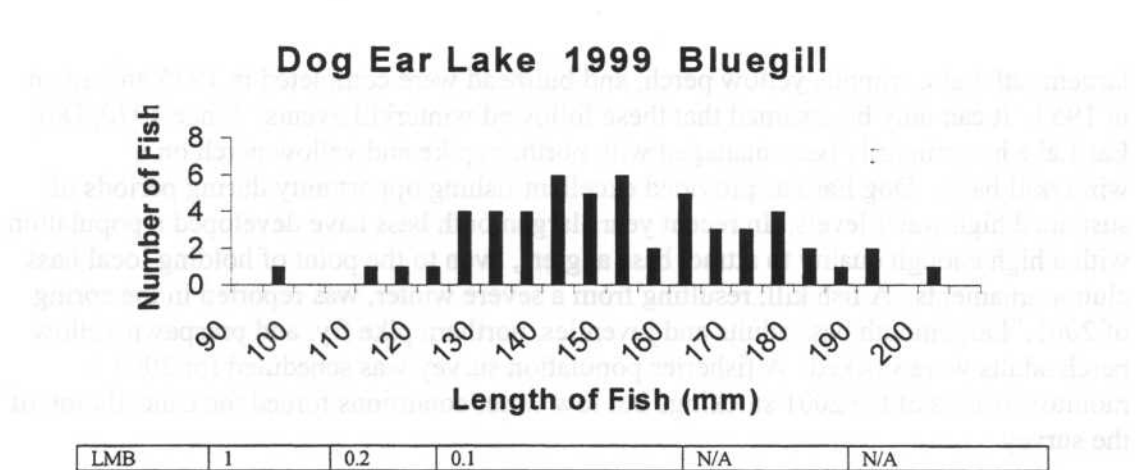
**Stocking record for Dog Ear Lake, Hyde County**

YEAR	NUMBER	SPECIES	SIZE
1980	160	NOP	ADT
1980	27,000	NOP	FRY
1982	2,000	NOP	FGL
1982	250	YEP	ADT
1983	128,000	NOP	FRY
1984	127,000	NOP	FRY
1986	125,000	NOP	FRY
1986	12,500	YEP	FGL
1988	375,000	NOP	FRY
1989	127,000	NOP	FRY
1989	1,270	YEP	ADT
1991	12,700	NOP	FGL
1991	10,000	YEP	FGL
2000	8,550	YEP	JUN
2001	52	LMB	ADT
2001	110	LMB	JUN
2001	127,000	NOP	FRY
2001	400	YEP	ADT -

Dog Ear Lake was last surveyed in 1999 using eight, 24-hour,  $\frac{3}{4}$  inch frame net sets. Surprisingly, bluegill was the most abundant species with several age classes and fish up to 200 mm being sampled. Several years of high water conditions along with the emergence of a largemouth bass population attributed to this increase in bluegill density and quality. Until a fish population survey can be conducted, the degree of the severity of the 2001 winterkill is unknown.

**Total catch of eight, 24 hour, 3/4-inch frame nets at Dog Ear Lake, Tripp County, 1999**

Spec.	No.	%	CPUE (80%CI)	PSD	Stock Mean Wr
BLG	343	68.7	42.9 (15.0)	52	117
BLB	79	15.8	9.9 (4.7)	27	N/A
GRS	68	13.6	8.5 (2.9)	59	119
NOP	4	0.8	0.5	N/A	N/A
YEP	4	0.5	0.5	N/A	N/A




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### MANAGEMENT GOAL

**To manage the fishery at Dog Ear Lake to maximize angler opportunity.**

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### OBJECTIVES AND STRATEGIES

- Objective 1.** Maintain black bullhead densities at a trap-net CPUE of 50 or less.
- Strategy 1 a. Increase predator densities to a level that effectively limits bullhead recruitment.
- Strategy 1b. Physically remove black bullheads to reduce densities.
- Objective 2.** Establish Dog Ear Lake's largemouth bass population with a nighttime electrofishing CPUE of 20 or greater
- Strategy 2a. Stock largemouth bass adults to introduce the species to the lake if necessary after winterkill.
- Objective 3.** Enhance the yellow perch population to a CPUE of between 6 and 12 with condition and growth at or above the state average.
- Strategy 3a. Monitor yellow perch population by means of standard survey methods to determine density, growth and condition.

- Objective 4.** Maintain northern pike densities with a CPUE of 5/net or greater to provide an additional predator to control bullheads.
- Strategy 4a. Monitor northern pike population by use of standard survey methods to determine density, growth and condition.
- Strategy 4b. Stock with northern pike fingerlings, if necessary, to supplement existing population.
- Objective 5.** Inform, receive, and use public input to assist in the management of Dog Ear Lake.
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## **5 YEAR OPERATIONAL PLAN**

1. Conduct a standard fisheries population survey in 2003 utilizing eight, 24-hour frame-net sets to monitor all fish species.
  2. Utilize Department crews to remove all black bullheads captured during the 2003 survey.
  3. If netting survey reveals a yellow perch CPUE of less than 5, stock with perch adults at a rate of 10/acre.
  4. If standard survey reveals a northern pike CPUE of 2 or less, stock with fingerlings at a rate of 100/acre.
  5. The local Conservation Officer and other GF&P staff should solicit input from all sources and provide information to the Regional Fisheries Manager on a timely basis.
  6. Conduct a thorough evaluation of the present management plan and complete a new plan by January, 2007.
- 

Completed by **Dan R Jost**, Regional Fisheries Manager, Region U

## FIVE YEAR FISHERIES MANAGEMENT PLAN

**Water:** Snow Dam (60-12)

**County:** Tripp

**Present Plan:** F-21-R-34

**Date:** January 2002 - December 2006

**Previous Plan:** F-21-R-29

**Date:** January 1997 - December 2001

**Surface Area:** 76 Acres

**Management Class:** WWM

**Maximum Depth:** 9 Feet

**Mean Depth:** 4 Feet

**Legal Description:** Section 16, Township 101 N, Range 74 W

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### INVENTORY

Snow Dam is a 76-acre impoundment 2.5 miles south of Hamill in northeastern Tripp County. The artificial lake was created in the mid-1930s when the Works Progress Administration (WPA) constructed an earthen dam on Moccasin Creek. The entire lake is owned by the South Dakota Dept. of Game, Fish & Parks and lies within a 280-acre Game Production Area.

The watershed for Snow Dam is approximately 20,480 acres or 32 square miles. Land use in the watershed is 80% cultivated farmland, 15% native grasses utilized as hay and pastureland, and 5% roads, farmsteads and tree belts. Topography in the watershed is nearly level to gently sloping with heavy clay soil types. From the outlet of Snow Dam, water flows from Moccasin Creek to the White River and eventually the Missouri River. Emergent vegetation, primarily cattail, encircles the entire lake. Submergent vegetation is found scattered throughout the lake and grows to a depth of three feet. Snow Dam is accessible from adjacent Highway 49. A natural boat ramp is the only public use facility at Snow Dam.

Little historical information is available concerning the fishery at Snow Dam. The first recorded stocking was in 1951 when 50 largemouth bass were put into the lake. Intensive stockings of black bullheads, black crappies, bluegills, fathead minnows, largemouth bass, and yellow perch were completed in 1953. Channel catfish were introduced to Snow Dam in 1956. No other recorded stockings occurred until 1977 when fathead minnows, northern pike, and yellow perch were stocked following winterkill. Since 1977, several stockings of northern pike and yellow perch have been completed with occasional stockings of bluegill and largemouth bass adults when available.



**Stocking record for Snow Dam, Tripp County**

YEAR	NUMBER	SPECIES	SIZE
1980	525	YEO	ADT
1982	30	LMB	ADT
1982	60,000	NOP	FRY
1982	1,000	YEP	ADT
1985	79	BLG	ADT
1985	49	LMB	ADT
1987	3,800	YEP	FGL
1988	75,000	NOP	FRY
1989	6,000	NOP	FGL
1989	150	YEP	ADT
1989	1,400	YEP	FGL
1990	2,800	YEP	ADT
1991	6,000	NOP	FGL
1993	22	LMB	ADT
1993	6,000	NOP	FGL
1997	112	LMB	ADT
1999	7,600	NOP	FGL
1999	750	YEP	ADT
2001	38,000	NOP	FRY
2001	200	YEP	ADT

Snow Dam was last surveyed in 2000. Eight, 24-hour,  $\frac{3}{4}$  inch frame nets sets were used to sample the adult fish population. Black bullheads dominated the population with a CPUE of 650.4 and a PSD of 31. Relative condition was 93.7 indicating a stunted population. Sixteen carp and one black crappie were the only other species captured. A fish kill due to heavy snow cover was recorded during the spring of 2001. Test netting to determine the severity of the kill was not completed but stockings of yellow perch adults and northern pike fry were completed.

**Total catch of eight, 24 hour, 3/4-inch frame nets at Snow Dam, Tripp County, 2000**

Spec.	No.	%	CPUE (80%CI)	PSD	Stock Mean Wr
BLB	5,203	99.7	650.4 (121.5)	31	93.7
CAP	16	0.3	2(1)	N?A	N?A
BLC	1	0.0	0.1 (0.1)	N/A	N/A

**MANAGEMENT GOAL**

**To manage the fishery at Snow Dam to maximize angler opportunity.**

## OBJECTIVES AND STRATEGIES

- Objective 1.** Decrease black bullhead densities to a trap-net CPUE of 100 or less.
- Strategy 1 a. Increase predator densities to a level that effectively limits bullhead recruitment.
- Strategy b. Physically remove black bullheads to reduce densities.
- Objective 2.** Establish Snow Dam's largemouth bass population at a nighttime electrofishing CPUE of 20 or greater
- Strategy 2a. Stock largemouth bass adults to introduce the species to the lake.
- Objective 3.** Enhance the yellow perch population to a CPUE of between 6 and 12 with condition and growth at or above the state average.
- Strategy 3a. Monitor yellow perch population by means of standard population survey methods to determine density, growth and condition.
- Objective 4.** Maintain northern pike densities with a CPUE of 5/net or greater to provide an additional predator to control bullheads.
- Strategy 4a. Monitor northern pike population by use of standard survey methods to determine density, growth and condition.
- Strategy 4b. Stock with northern pike fingerlings, if necessary, to supplement existing population.
- Objective 5.** Inform, receive, and use public input to assist in the management of Snow Dam.
-

## **5 YEAR OPERATIONAL PLAN**

1. Conduct a standard fisheries population survey in 2004 utilizing eight, 24-hour frame-net sets to monitor all fish species.
2. Utilize Department crews to remove all black bullheads captured during the 2004 survey.
3. If netting survey reveals a yellow perch CPUE of less than 5, stock with perch adults at a rate of 10/acre.
4. If standard survey reveals a northern pike CPUE of 2 or less, stock with fingerlings at a rate of 100/acre.
5. The local Conservation Officer and other GF&P staff should solicit input from all sources and provide information to the Regional Fisheries Manager on a timely basis.
6. Conduct a thorough evaluation of the present management plan and complete a new plan by January, 2007.

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Completed by Dan R Jost, Regional Fisheries Manager, Region

## **FIVE YEAR FISHERIES MANAGEMENT PLAN**

Water: Ravine Lake

County: Beadle

**Present Plan:** F-21-R-34

**Date:** January 1, 2002 to December 31, 2006

**Previous Plan:** F-21-R-20

**Date:** January 1, 1988 to December 31, 1992

**Surface Area:** 83 acres

**Management Class:** Warmwater Semi-Permanent

**Maximum Depth:** 12 feet

**Mean Depth:** 6.4 feet

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### **MANAGEMENT GOAL**

**To optimize fishing opportunity in Ravine Lake**

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#### **Objectives and Strategies**

**Objective 1.** To maintain a put-and-take yellow perch fishery.

Strategy 1. Stock 830 (10/acre) pre-spawn adult yellow perch annually.

**Objective 2.** To establish and maintain a black bullhead population with a maximum trap-net CPUE<sup>1</sup> of 100 and a PSD of at least 40.

Strategy 2. Reduce and maintain the bullhead population to objective levels through subsidized commercial fishing or Department removal efforts.

**Objective 3.** To evaluate the effectiveness of fisheries management strategies and to collect data on non-game species.

Strategy 3. Conduct lake surveys every other year using a minimum of three overnight gill-net sets and 10 overnight trap-net sets.

**Objective 4.** To keep other agencies, the Beadle County Conservation Officer, and the public informed of fisheries management activities on Ravine Lake and to solicit their input when planning future activities.

Strategy 3a. Provide completed lake survey reports and management plans to other agencies and the public when requested.

Strategy 3b. Meet with the Beadle County Conservation Officer annually to discuss lake survey results and plan future management activities.

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<sup>1</sup> See Appendix A for a definition of CPUE, PSD, RSD-P, and mean Wr.

### **Five Year Operational Plan**

1. Conduct lake surveys every other year using at least three overnight gill net sets and ten overnight trap net sets.
  2. Analyze lake survey data and publish the results.
  3. Stock 830 pre-spawn yellow perch adults annually.
  4. Conduct a thorough evaluation of the current management plan and complete a new plan by January 1, 2007.
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### **Fisheries Management**

Black bullheads and carp have dominated the fish populations in Ravine Lake since the late 1980's. Since then, all attempts to establish crappie, walleye, or largemouth bass fisheries have failed. Ravine Lake also suffers from poor water quality, frequent winterkills, and a lack of submerged vegetation. We hope that by controlling the bullhead population and making annual stockings of yellow perch adults, a fishery can be developed.

### **Ownership of Lake and Adjacent Lakeshore Properties**

Ravine Lake is owned by the City of Huron and the fishery is managed by the South Dakota Department of Game, Fish and Parks (GFP). Any property not owned by the City of Huron is privately owned.

### **Fishing Access**

There is a boat ramp located on the east side of the lake. Shore fishing is available in many areas around the lake.

### **Water Quality and Aquatic Vegetation**

Field observations recorded during the 1999 and 2001 lake surveys indicated that the water in Ravine Lake was stained with a Secchi depth of 1 foot or less. No submerged aquatic vegetation was observed but some common cattail was observed in the north end of the lake.

## **2001 Trap Net Catch**

Black bullheads and common carp comprised 99.5% of the trap net sample (Table 1). Green sunfish and yellow perch were also sampled.

**Table 1.** Total catch from ten overnight trap net sets at Ravine Lake, Beadle County, August 8-9, 2001.

Species	Number	Percent	CPUE	80% C.I.	Mean CPUE*	PSD	Mean Wr
<b>Black Bullhead</b>	8,193	98.0	819.3	+371.4	497.8	0	--
<b>Common Carp</b>	123	1.5	12.3	+4.3	4.0	5	--
<b>Green Sunfish</b>	40	0.5	4.0	+4.3	2.5	--	
<b>Yellow Perch</b>	5	0.06	0.5	+0.6	1.2	--	--

\* 1 year (1999)

## **Black Bullhead**

Ravine Lake is plagued by a huge population of small black bullheads (Table 2 and Figure 1). Stockings of walleye and white crappies have failed to establish a fishery. Until the bullhead problem is brought under control, it is unlikely game fish can become established.

**Table 2.** Black bullhead trap-net CPUE and PSD for Ravine Lake, Beadle County, 1992-2001.

	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
CPUE								497.8		819.3
PSD								1		0

**Table 2.** Stocking record for Ravine Lake, Beadle County, 1991-2001.

Year	Number	Species	Size
1991	8,300	Largemouth Bass	Fingerling
	500	Northern Pike	Adult
1999	14,400	Walleye	Fingerling
	764	White Crappie	Adult
2000	14	Bluegill	Fingerling
	834	White Crappie	Adult
2001	850	Walleye	Lrg. Fingerling

**Figure 1.** Length frequency histograms for black bullheads sampled with trap nets in Ravine Lake, Beadle County, 1999, 2001.

